

Model 135 Liquid Helium Level Monitor



The Model 135 is an advanced liquid helium level monitor which incorporates AMI's patented sample-and-hold design with *automatic helium level sensor vacuum burnout protection*. The Model 135 is ideal for operation in systems where it is important to monitor the liquid helium level while also minimizing the helium losses.

High and low alarm functions

The Model 135 adds "High" and "Low" alarm setpoints which activate front panel LED warning indicators and rear panel relay outputs in the event of an overfill or liquid loss condition. The alarms also energize an audible warning which can be silenced from the front panel. "High" and "Low" setpoints are programmable from 0 to 100 percent of sensor active length.

Minimal liquid helium losses

In order to minimize liquid helium loss, the Model 135 automatically energizes the liquid helium level sensor at user programmable time intervals and monitors the normal (resistive) zone as it progresses from the top of the sensor toward the liquid surface. As soon as the normal zone reaches the liquid surface, the level reading is saved and the current in the sensor is turned off until the next sample interval occurs. An LED sensor current indicator is illuminated during each sample. Sample intervals are user programmable from the front panel and can be set between "0.0" (continuous reading) to "600.0" minutes or hours. A manual update switch provided on the front panel can also be set to obtain continuous readings during a helium transfer period or to manually force an immediate measurement.

Sensor burnout protection

The Model 135 provides automatic helium level sensor vacuum burnout protection. A liquid helium level sensor energized in a vacuum environment will self-heat to the point of burnout within seconds. AMI's innovative microprocessor-based circuitry detects incipient sensor burnout and de-energizes the sensor before damage can occur. A 5% increase in sensor resistance will trigger this protection, causing the current to be switched off for 6 seconds before attempting to resume normal operation.

Convenient display

The Model 135 is equipped with a 4 digit LED digital display which provides liquid helium level indication in inches, centimeters, or percent as selected by a front panel switch. Front panel sensor calibration allows the user to calibrate the instrument quickly and easily for any length sensor. Calibration can be performed in either inches or centimeters of sensor active length with automatic reading crossover between inches, centimeters, and percent.

Remote computer monitoring or controlled operation

The Model 135 can be provided with an optional [0-10 volt DC signal](#) on the rear panel of the instrument for use with a recorder. A [4-20 mA current loop option](#) is available in lieu of the voltage signal. Computer interface options, including [RS-232 Serial Port/Data Logger](#) or [IEEE-488](#), are also available.